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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,576	03/23/2004	Dale A. Sowell	84,914	3552

38092 7590 07/28/2005

OFFICE OF COUNSEL, CODE 004  
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EXAMINER

GARBER, CHARLES D

ART UNIT PAPER NUMBER

2856

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/807,576	Applicant(s) SOWELL ET AL.	
	Examiner Charles D. Garber	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/23/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Drawings***

The drawings are objected to because figures not within acceptable margins and reference numbers difficult to read. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over English (US Patent 5,259,236) in view of Brandon (US Patent 4,315,426) and Yuan (US Patent 5,689,058).

English discloses a Tribometer, which is a slip meter for measurement of surface slip resistance between a test specimen 19 and a test surface 46 (title, abstract and figure 1 and 2).

English discloses means for generating linear force using pneumatic actuator 3 energized by motor 6 and compressor 9 which is housed on the device 1. Though the actuator is considered self-energized (as the compressor is not separate from the device 1) the actuator (e.g. linear force generator) is not a magnetic means as in the instant invention.

Such means are described in the specification as operating by "circuitry 52 connected to the magnetic coil 44 for energization thereof to operate the electromagnetic actuator 20".

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Brandon discloses a friction measuring device using a pneumatic actuator 19 to force a measurement probe against a test surface. Brandon teaches "It should be further realized that the probe actuator can be operated by hydraulic, vacuum, electrical or air pressure means". Electrical actuators inherently operate on electromagnetic principles to provide motive force.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to alternatively use an electrical actuator as an alternative to a pneumatic actuator. Electrical actuators avoid the danger of using high pressure air as well as eliminating the need for complicated piping and connections which may be subject to leakage and loss of performance.

English further discloses mast assembly 2 which is positioning means on which the linear force generator is mounted for establishing contact of the test specimen with the test surface at an angle of incidence while said linear force is transmitted from the linear force generator to the test surface through the test specimen as in the instant invention (see figure 1).

Pressure gauge 120 is considered to be load sensing means connected to the test specimen for indicating load in response to said contact established between the test specimen and the test surface (column 3 line 67 to column 4 line 15).

However the gauge does not record measurement data.

Yuan discloses a friction testing apparatus teaching the "apparatus further may be constructed to be computer-controlled and with graphic displays for automatically and interactively executing desired evaluation procedures within the machine's capability

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limits, including changing specimen contact pressure...and recording the normal contact force which may include friction force on the specimen"

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide for means such as computer recording of contact force in order to avoid errors which may occur from manual notation of such critical data.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over English (US Patent 5,259,236) as modified by Brandon (US Patent 4,315,426) and Yuan (US Patent 5,689,058) and applied to claim 1 above and further in view of Welner (US Patent 5,736,630).

English further discloses rod 4 which is a force exerting actuator rod pivotally interconnected between the positioning means and the test specimen (see figures 1, 2, 3, 7).

However, the references do not expressly teach a magnetic coil through which the actuator rod extends.

Examiner nevertheless considers a coil is inherent in the electric actuator taught by Brandon. Whether the actuator is fundamentally linear or a rotary motor whose rotary motion is converted to linear motion a coil is a fundamental and inherent component of all electric motors. Examiner further takes Official Notice that the use of linear electric motors (which have a coil through which a straight actuator rod extends) are widely known in the art and one having ordinary skill in the art would have known that a linear motor is the simplest and most common electric actuator for producing the

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linear motion required by the Brandon reference. What is common in the art is advantageously easy to apply.

The references also do not expressly teach an electric power supplying battery; and switch means interconnecting the battery with the magnetic coil.

Welner discloses a slip friction testing device teaching "A battery provides power to various electronic elements of the apparatus so that it can operate independently as a portable unit. A power switch controls the application of supply voltages from the battery to various elements of the apparatus."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a battery and switch to power the device so that it can operated independently.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over English (US Patent 5,259,236) as modified by Brandon (US Patent 4,315,426) and Yuan (US Patent 5,689,058) and Welner (US Patent 5,736,630) and applied to claim 2 above and further in view of Owen et al. (US Patent 6,813,960).

The references applied above do not expressly teach an anchored strain arm displaced into engagement with the test surface by the actuator rod; and load cell means mounted on the strain arm and connected to the load sensing means for transmission of load sensing signals thereto.

Owen teaches using arm like coupler rod 55 to connect an active mechanism 63 of a test machine (in other words, the actuator) to a column supporting a specimen. The rod includes a strain sensor 57 (load cell) for measuring static loads.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the test specimen to the actuator with a coupler or arm supporting a strain sensor or load cell in order to measure static loads electronically.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over English (US Patent 5,259,236) as modified by Brandon (US Patent 4,315,426) and Yuan (US Patent 5,689,058) and applied to claim 1 above and further in view of Owen et al. (US Patent 6,813,960).

The references applied above do not expressly teach an anchored strain arm displaced into engagement with the test surface by the linear force generator; and load cell means mounted on the strain arm and connected to the load sensing means for transmission of load sensing signals thereto.

Owen teaches using arm like coupler rod 55 to connect an active mechanism 63 of a test machine (in other words, the actuator) to a column supporting a specimen thus anchoring it. The rod includes a strain sensor 57 (load cell) for measuring and transmitting static loads.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the test specimen to the actuator with a coupler or arm supporting a strain sensor or load cell in order to measure and transmit static loads electronically.

### ***Conclusion***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg



**CHARLES GARBER  
PRIMARY EXAMINER**